

Work Order ID 69800

Thursday, May 19, 2011 1:03:35 PM



Page 1

Item ID: D6008-180

Accept



Setup Start



Revision ID:

Item Name: Crosstube Extrusion

Stop



Start Date: 5/19/2011 Start Qty: 10.00



Cust Item ID:

Required Date: 7/12/2012 Req'd Qty: 10.00



Customer:

Reference:

Approvals: Process Plan: CL Date: 11/05/19 Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6008	Rev A								

100

0.00



PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: 14138 ☐ a) Order as per Dwg D6008 ☐ b) Material: 3.250 x 0.438 wall 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube ☐ c) Minimum ultimate tensile strength = 77 ksi ☐ d) Minimum tensile yield strength = 66 ks

CL 11/05/19 10

110

0.00



Receive & Inspect for Damage & Mat'l Certs

Packaging

Memo

0.00

Packaging

Ensure material certification is attached

10/25/12

120

0.00



QC6- Inspect dimensions to drawing

QC

Memo

0.00

Quality Control

Ensure Material certification comply to Dwg D6005

see inspection sheet
Last Page
See last

42

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 69800

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Item ID: D6008-180

Accept



Setup Start



Revision ID:

Item Name: Crosstube Extrusion

Stop



Start Date: 5/19/2011 Start Qty: 10.00



Cust Item ID:

Required Date: 7/12/2012 Req'd Qty: 10.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

140

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

150

Identify as per dwg & Stock Location: LG

0.00



Packaging

Memo

0.00

Packaging

Rm 12-5-14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____





NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			



NOTE: Date & initial all entries


Work Order ID 69800

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Thursday, May 19, 2011 1:03:35 PM

Item ID: D6008-180 Accept  Setup Start 
Revision ID: Stop 
Item Name: Crosstube Extrusion
Start Date: 5/19/2011 Start Qty: 10.00  Cust Item ID:
Required Date: 7/12/2012 Req'd Qty: 10.00  Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start 
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop 

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 	QC21- Final Inspection - Work Order Release	0.00							
QC Quality Control	Memo	0.00							

12/5/14
MF
12-05-14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 1

Work Order ID: 69800



Parent Item: D6008-180



Parent Item Name: Crosstube Extrusion



Start Date: 5/19/2011

Required Date: 7/12/2012

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP Rev:C04.06.15 Added tolerance to Step 2 KJ/JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6008-180P  Crosstube extrusion		Purchased	No			110	Each	0.0000	1 	10		<i>[Signature]</i> <i>[Date]</i>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

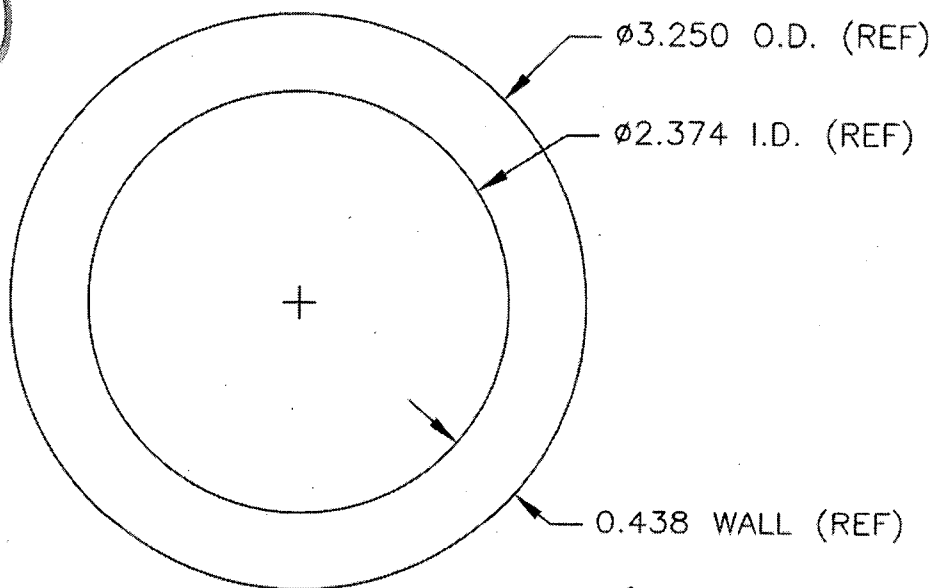
NOTE: Date & initial all entries



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D6008	REV. A SHEET 1 OF 1
DATE 00.11.17		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.17	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

RELEASED
00.11.24 *[Signature]*



NOTES

- 1) D6008-XXX CROSSTUBE
LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 180" LONG TUBE: D6008-180

CD 11105119
WID: 69800

- 2) MATERIAL: 3.250 OD x 0.438 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.008 MEAN (± 0.016 INCLUDING OVALITY)
WALL: ± 0.020 MEAN (± 0.044 INCLUDING ECCENTRICITY)
LENGTH: XXX $+0.125/-0.000$
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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ALUnna ref. no.	42438/7
Customer PO.	PO. 14138
Date:	04.10.12

Dart Aerospace Po. 14138

D6008 - 180

Made in Germany. Dest.: Hawkesbury ONT, Canada

Date: 04.10.12

We hereby declare that the wooden packing material are totally free from bark and apparently

Boxdimension

free from live plant pests

[illegible]

Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005

Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

Kunde: Dart Aerospace Ltd.

Client:

1270 Aberdeen Street
K6A1K7 Hawkesbury, ON Canada

Zeugnisnummer: 459/12

Cert No. / No. du certificat:

Bestellnummer: PO14138

Order No. / No. de commande

Auftrag:

42438/7

Our Reference/Notre Reference:

Produkt:

Product / Produit:

Rohre nahtlos gepresst

Tubes seamless extruded

Spezifikation:

Specification:

AMS - QQ - A - 200/11; Spezifikation Dart Aerospace D6003

Werkstoff:

Alloy/Alliage:

7075

Zustand:

Temper/Etat

T 6511

Abmessung

Size / Dimension

3,250 INCH x 2,374 INCH x 0,438 INCH x 180,000 INCH
D6008-180

Kennzeichnung

Marking/Marquage:

Cert. No. 459/12 - ALUnna - 7075 - T6511 - Cast No. 7490 - AMS - QQ - A - 200/11 - 3.250" OD x 0.438" Wall -
Heat Lot No. 1401164 - ALUnna Order Conf. No. 42438/7-1 - P.O. 14138

Lieferung

Delivered Material / Matériel délivré:

pcs.

lbs

12

849

Country of Manufacture: Germany

Products are in accordance with applicable RoHS

Elemente ohne Grenzwerte:

einzel max. 0,05 %, insgesamt 0,15 %

1. Chemische Analyse

Chemical Analysis / analyse chimique

Charge/ Cast No.	min. max.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
		0,40	0,50	1,2 2,0	0,30	2,1 2,9	0,18 0,28	5,1 6,1	0,20					
7490/12		0,096	0,201	1,513	0,069	2,550	0,218	5,985	0,038	0,004	0,0415	0,0001	0,0017	0,0002

Hydrogen content: 0,09

ccm/100 g Al Elements without indication < 0,01 %

country of melt manufacturer: Germany

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat Lot No.
	min. max.	81,0 73,0	7,0			
1	83,955	75,545	10,0			1401164
2	85,695	77,575	10,0			

RMS: outside 25 - max. 18,0 µ"

**Ergebnis der
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order.

Resultats:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

mergardtri

10.04.2012



Certified acc. DIN EN ISO 9001:2008 and DIN EN 9100:2003
valid until 2013-11-10

Cert.- Reg. No.: 001959 QM08; 001959 ASH

ALUnna

Aluminiumwerk Unna AG, Uelzener Weg 36. 59425 Unna, Germany

Abnahmebeauftragter

EXTRUSION INSPECTION SHEET

ULTRA SONIC MEASUREMENTS

TUBE #	TOTAL LENGTH	DIA two readings	INSIDE DIA	wall thickness measured w/vern	Strightness at 12"	Rockwell Reading	LOCATION on tube	R1	R2	R3	R4
DWG	180.00"	3.250"	2.374"	0.438"	0.010"	N/A	MIDDLE				
1	180.00"	3.248"/3.251"	2.362"	0.428"/0.448"	0.015"	N/A	90.00"	0.428"	0.440"	0.449"	0.450"
2	180.00"	3.249"/3.245"	2.364"	0.421"/0.449"	0.011"	N/A	90.00"	0.449"	0.440"	0.437"	0.447"
3	180.00"	3.249"/3.254"	2.367"	0.445"/0.428"	0.012"	N/A	90.00"	0.435"	0.446"	0.453"	0.444"
4	180.00"	3.247"/3.248"	2.368"	0.436"/0.449"	0.013"	N/A	90.00"	0.444"	0.447"	0.445"	0.438"
5	180.00"	3.248"/3.244"	2.369"	0.434"/0.449"	0.021"	N/A	90.00"	0.444"	0.436"	0.442"	0.451"
6	180.00"	3.250"/3.248"	2.372"	0.424"/0.450"	0.010"	N/A	90.00"	0.446"	0.454"	0.444"	0.437"
7											
8											
9											
10											
11											
12											
13											
14											
15											
PART # D6008-180		P/O# 14138		BATCH # B69800		Notes:					

REFERENCE ONLY

5/17/0014

